AMENDMENTS TO THE SPECIFICATION

Please rewrite the heading on page 1, line 6, as follows:

1) ~~The State of the Art~~ The Background Of The Invention

Please rewrite the paragraph bridging pages 1-2 as follows:

A central issue in light microscopy arises from limitations due to the spatial resolution of images. This is dependent upon the objective lens used and the geometry of the light focused by the lens. In general, microscope objectives with a high magnification and a high numerical aperture are used for achieving the best resolution (e. g. 63x; 100x/N.A. 1.4 oil immersion). However, there exist physical limitations for light collection through the glass lens of any objective. In particular, the xy resolution is always (at least two times) greater than in the z-axis (a.k.a "optical" axis). Specifically, x,y plane resolution is around 100 - 150 nm, whereas the resolution along the z-axis is much lower (around 300 to 500 nm), and this fact results in a major systematic artifact of light microscopy- i.e. "**axial aberration**", whereby a spherical object at the focus of a microscope objective in fact appears to be elliptic in shape, with its largest extension along the z-axis, i.e. the light path. A schematic representation of this type of optical aberration (the "elongation" effect) is shown in fig. 9. The axes of the microscope optics are x (9.1), y (9.2) and z (9.3). A feature 9.4 which is originally circular in reality appears to be elongated 9.5 due to optical aberration, and this problem is one of the major obstacles to overcome in 3 dimensional imaging microscopy.

Please rewrite the paragraph starting on page 6, line 2, as follows:

A method for improving resolution in fluorescence microscopy is based upon the use of multi photon laser excitation. Fluorescence excitation of a fluorophore occurs at a certain wavelength λ nominally determined by its specific excitation absorption maxima. Efficient absorption of a single photon at this wavelength results in excitation and emission of fluorescent light (conventional fluorescence microscopy). However, excitation may also be achieved by simultaneous absorption of two photons of lower energy, displaying wavelengths approximately half the excitation maxima. This mode of so-called "multi-photon" excitation is considered to be "biphotonic or two-photon" induced fluorescence, and is made possible by grace of high energy pulsed lasers. In general this mode of excitation can be considered a means to excite fluorescence from, for example, a blue-green absorbing fluorophore using multi-photon excitation from a near-infra-red laser emitting sub-microsecond pulses of light. Inasmuch as the two photons of near-IR light are aligned and collide only at the focal plane of the optical set-up, the energy density of this multi photon excitation is concentrated solely at a single femtolitre volume within the microscope's focal plane. As such, multi-photon excitation is intrinsically confocal by nature. In effect this approach gives a pure, and efficient image free from "out of focus" fluorescence. The disadvantage of multi photon fluorescence microscopy is the requirement for high energy pulsed lasers to be attached to the microscope, resulting in high cost and large, difficult to manage equipment assemblage, maintenance and application.

Please delete the paragraph at page 9, lines 5-7 in its entirety.